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| 10/584,924 | 07/05/2006 | Shinji Oishi | 2006_0884A | 2241 |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,924

Applicant(s)

OISHI ET AL.

Examiner

Marcus Charles

Art Unit

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISAC)
Paper No(s)/Mail Date 07-05-2006 & 01-31-2008
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

This is the first action relating to serial application number 10/584,924 filed 07-05-2006.

Claims 1-16 are currently pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The examiner has accepted the drawing filed with this application as formal drawing.

Specification

Abstract

3. The abstract of the disclosure is objected to because the abstract include phrases which can be implied and refers to purported merits or speculative applications of the invention and should be a single paragraph long. Correction is required. See MPEP § 608.01(b).
4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

6. The disclosure is objected to because of the following informalities: it is difficult to clearly identify the title. The title should be written in bold letters so that it can be distinguish from the main body of the specification.

The disclosure makes reference to "patent document numbers". These phrases must be deleted from the disclosure.

The use of square parenthesis in the specification is not proper because "square parenthesis" indicate what is to be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by JP (2002-180203) to Hiromasa. Hiromasa discloses a needle bearing made from a steel sheet material comprising an outer ring (1) having a radially inner surface, and a plurality of needle rollers (3) arranged along the radially inner surface of the outer ring, the steel sheet being formed of carbon steel containing up to 0.4 mass percent.

In claim 5, note Hiromasa discloses steel sheet contains Si 0.3 mass percent.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of JP (09-316540) to Noaki et al. Hiromasa fails to disclose the sheet metal is subjected to induction hardening and a spheroidizing annealing treatment, and the spheroidization rate is 50% or over. Noaki et al. discloses a method of manufacturing a steel sheet that is subjected to induction hardening and spheroidizing annealing treatment and the spheroidization rate of the carbides is greater of equal to 95%. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the steel sheet of Hiromasa so that the steel sheet is subjected to induction hardening, spheroidizing annealing treatment and the

spheroidization rate of the carbides is greater of equal to 95% in view of Noaki et al. in order to reduce deformation and to provide a desired surface hardness and hardening depth.

11. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of JP (3028688). Hiromasa fails to disclose the inner surface is subjected inducted hardening and tempering and has a Vickers hardness 653 HV or higher. JP (3028688) discloses the bearing surface (9a) of a metal element is subjected to induction hardening and tempering and the surface is set to more than 659 Hv. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inner surface of Hiromasa so that it is subjected to induction hardening and tempering and is set to a more that 650 Hv in view of JP (3028688) in order to reduce wear, friction and deformation.

12. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of Honda et al. (5,456,538). Hiromasa fails to disclose the inner surface of the outer ring has a circumferential roughness average in a range of between 0.05 and 0.3 micrometer and an axial roughness of not more than 0.3 micrometer. Honda et al. discloses a bearing surface (4) having a circumferential roughness .004 micrometers and an axial direction of 0.08 to 0.15 micrometers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the surface of the device of Hiromasa to include the circumferential and axial roughness value of the surface Honda et al. in order to reduce heat generation.

13. Regarding claims 10-11, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of JP (2002-031212). Hiromasa fails to disclose the steel sheet is coated with phosphate. JP (2002-031212) discloses an inner way of an outer race (10) of a sliding bearing made from a steel sheet and is coated with phosphate in order to prevent corroding and to provide a lubricating action. Therefore, it would have been obvious to one of ordinary skill in the art to modify the surface of Hiromasa so as to include a phosphate coating in view of JP (2002-031212) in order to

15. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of JP (62-266224) to Nojiri. Hiromasa fails to disclose the needle roller in a support structure as claimed. Nojiri discloses a supporting structure (see fig. 4) comprising a needle roller (see figs. 1-2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bearing of Hiromasa so that is used in a support structure for supporting a spindle in view of Nojiri in order to reduce friction and wear.

In claim 14, note Nojiri discloses the compressor is an air compressor.

16. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa in view of Budecker (4,977,606). Hiromasa fails to disclose the needle roller in a support structure of a piston pump as claimed. Budecker discloses piston pump (fig. 4) having a motor output shaft (5) and a shell type needle bearing (8/9c) mounted on

eccentric portion (6) of the motor output shaft (5) and supporting a plurality of pistons (10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bearing of Hiromasa so that it can be used in a piston pump of Budecker in order to reduce friction, wear and for effectively distributing the load of the piston.

In claim 16, note Budecker discloses the piston pump is used in a vehicle antilock brake system.

Citation

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the prior art cited in attached PTO Form 892.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Charles
/Marcus Charles/
Primary Examiner, Art Unit 3656